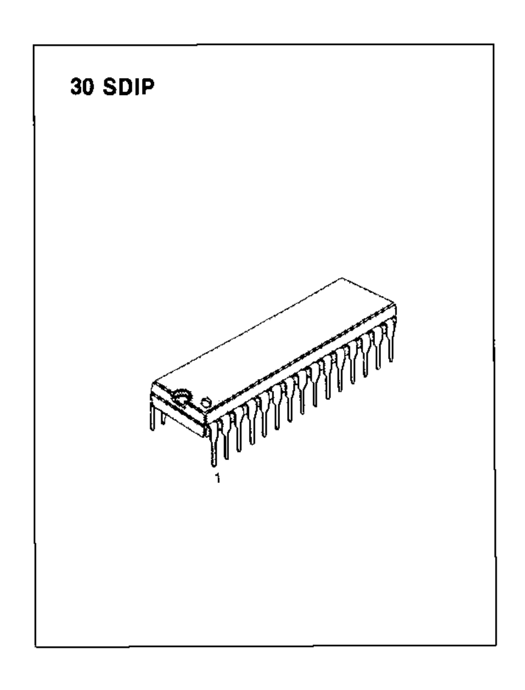
(VIF + SIF) SYSTEM FOR COLOR TV

THE KA2919 is a silicon monolithic integrated circuit containing the VIF section and SIF section on a single chip in the shrink-type 30S DIP package. Since the KA2919 is capable of performing video detection and sound detection independently or simultaneously, if can be applied to various sets from popular types to high-grade types, according to the designer's policy.



FUNCTIONS

VIF
- VIF Amp
- Video Det
- Peak IF AGC
- B/W Noise Canceller,
- RF AGC
- AFT
- SIF Det

SIF
- SIF Limiter Amp
- FM Det
- DC ATT
- AF Driver

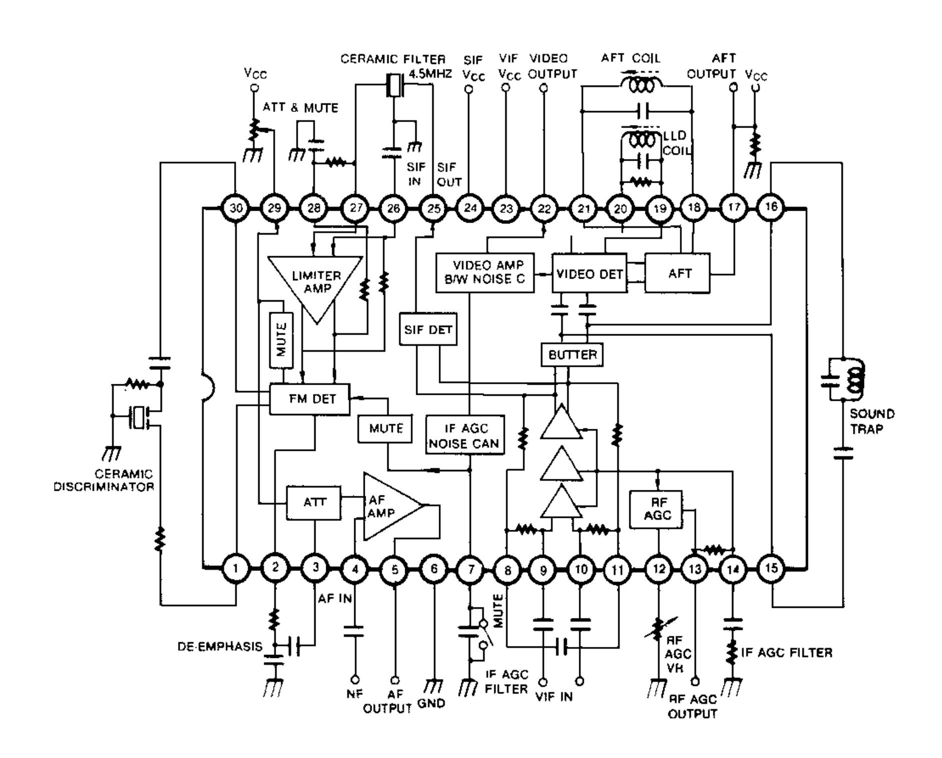
FEATURES

- **High-gain VIF amp requiring no preamp**
- **High AGC speed**
- **Provides wide-band detection characteristic and meets sound MPX demodulation requirements because of FM detection is quadrature detection**
- **Possible to use sound REC pin (Pin 2), AUX pin (Pin 3)**
- **Possible to mute video, sound for VTR**
  Pin 7 GND: Muting of both video and sound
  Pin 29 GND: Muting of sound only

ORDERING INFORMATION

Device	Package	Operating Temperature
KA2919	30 SDIP	−20 ~ +70°C

BLOCK DIAGRAM

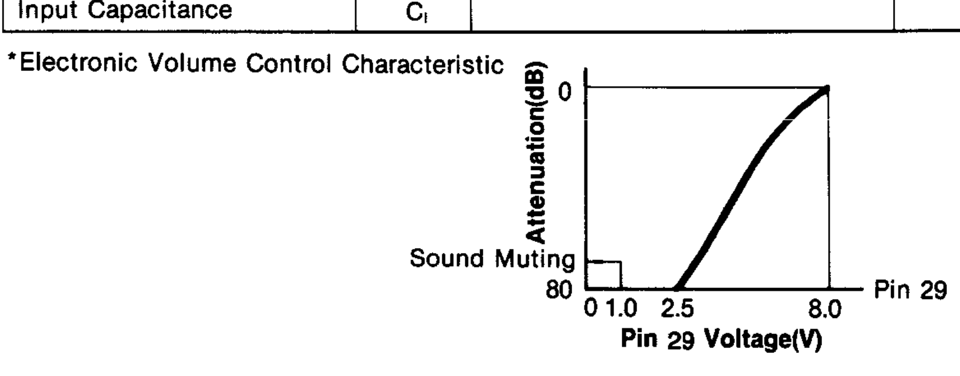


ELECTRICAL CHARACTERISTICS

VIF SECTION (Ta = 25°C, V_{CC} = 12V, f_p = 45.75MHz, f_s = 41.25MHz (VIF), f_o = 4.5MHz (SIF))

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit	Test FIG.
Total Circuit Current	$I_{23}+I_{24}$	DC	59	74	98	mA	1
Maximum RF AGC Voltage	V_{13H}	DC	8.5	8.9	9.2	V	1
Minimum RF AGC Voltage	V_{13L}	DC		0	0.5	V	1
Quiescent Video Output Voltage	V_{22}	DC	5.6	6.1	6.6	V	1
Quiescent AFT Output Voltage	V_{17}	DC	4.5	6.5	7.5	V	1
Input Sensitivity	S_{VI}	f_m = 400Hz 40% AM, V_o = 0.8V_{pp}	30	36	42	dBμ	2
AGC Range	V_{AGC}	f_m = 15KHz 78% AM, V_o = ±1dB	60	74		dB	2
Maximum Allowable Input	$V_{I\ MAX}$	f_m = 15KHz 78% AM, V_o = ±1dB	100	500		mV_{rms}	2
Video Output Amplitude	$V_{O(22)}$	V_i = 10mV_{rms}, f_m = 15KHz 78% AM	1.9	2.2	2.5	$V_{p\text{-}p}$	2
Output S/N	S/N	V_i = 10mV_{rms} CW	48	54		dB	2
Carrier Leakage	CL	V_i = 100mV_{rms}, f_m = 15KHz 78% AM	50	57		dB	2
Maximum AFT Voltage	V_{17H}	V_i = 10mV_{rms} SWEEP	11	11.5	12.0	V	2
Maximum AFT Voltage	V_{17L}	V_i = 10mV_{rms} SWEEP	0	0.4	1.0	V	2
AFT Detection Sensitivity	S_f	V_i = 10mV_{rms} SWEEP	70	100	140	mV/KHz	2
White Noise Threshold Level	V_{WTH}	V_i = 10mV_{rms} SWEEP	6.4	6.8	7.2	V	2
White Noise Clamp Level	V_{WCL}	V_i = 10mV_{rms} SWEEP	4.2	4.6	5.0	V	2
Black Noise Threshold Level	V_{BTH}	V_i = 10mV_{rms} SWEEP	1.9	2.2	2.5	V	2
Black Noise Clamp Level	V_{BCL}	V_i = 10mV_{rms} SWEEP	3.8	4.2	4.6	V	2
SIF Output Signal Voltage	$V_{O(25)}$	P/S = 20dB	40	60	100	mV_{rms}	2
Frequency Characteristic	f_c	−3dB	6	8		MHz	2
Differential Gain	DG	V_i = 10mV_{rms} 87.5% VIDEOMOD		4	10	%	2
Differential Phase	DP	V_i = 10mV_{rms} 87.5% VIDEOMOD		3	6	deg	2
Input Resistance	R_I		1.0	1.5	2.0	Kohm	2
Input Capacitance	C_I			3.5	7.0	pF	2

*Electronic Volume Control Characteristic

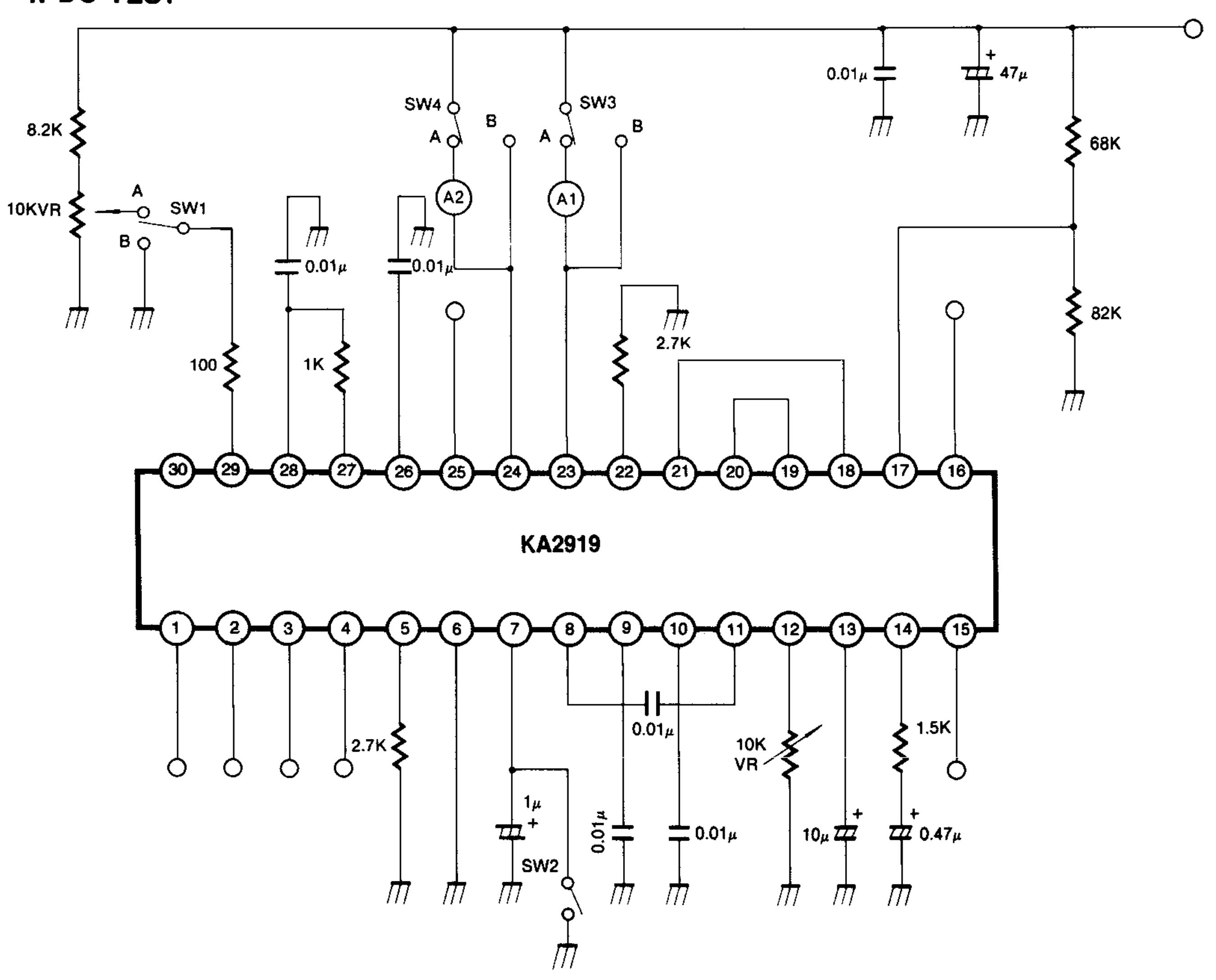


SIF SECTION (Ta = 25°C, V_{CC} = 12V, f_p = 45.75MHz, f_s = 41.25MHz (VIF), f_o = 4.5MHz (SIF))

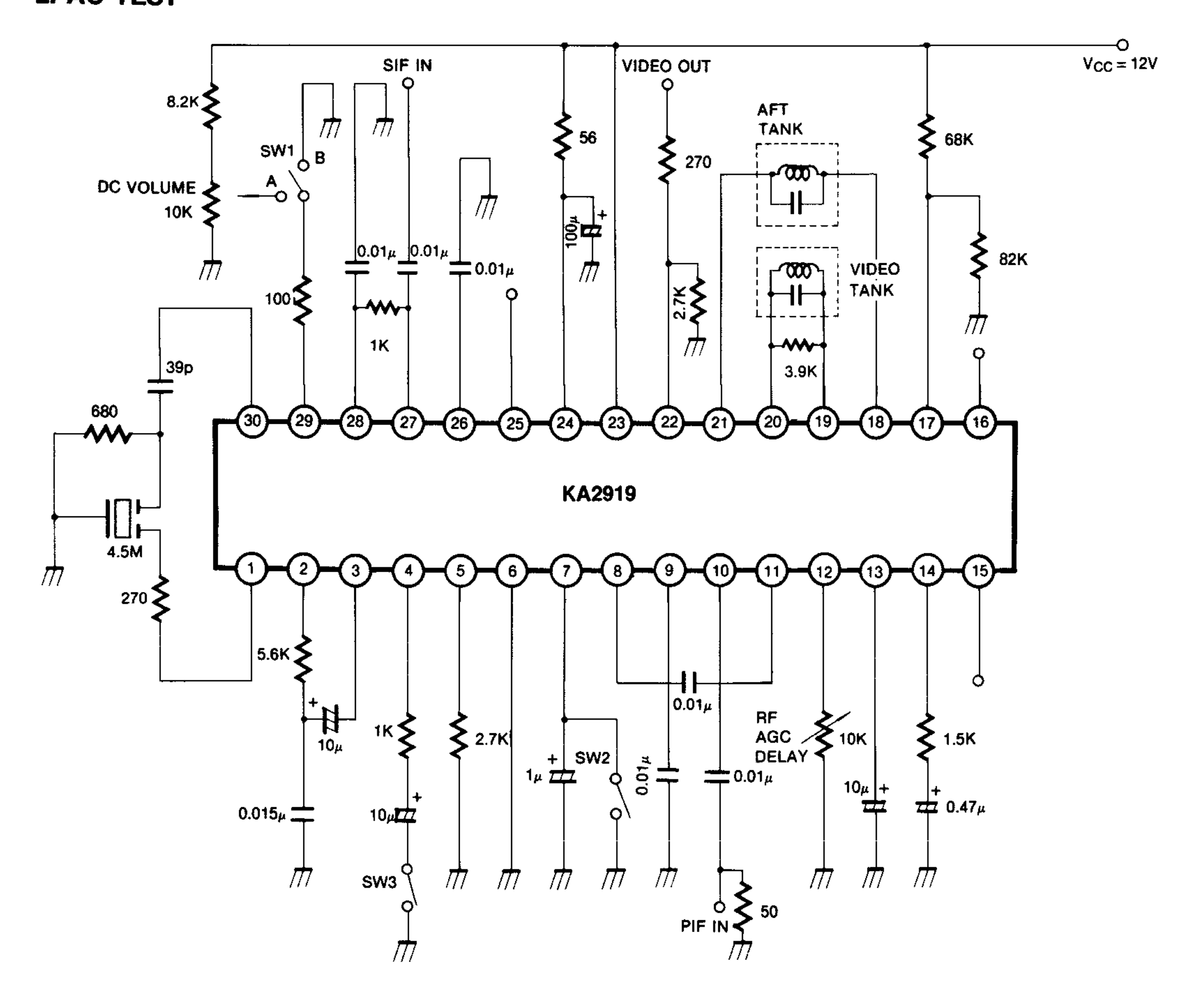
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit	Test PIG.
SIF Limiting Voltage	$V_{I\,(LIM)}$	−3dB		200	400	μV_{rms}	2
Detection Output Voltage	V_o (2)	V_i = 100mV_{rms}, f_m = 400Hz, f = ±25KHz	450	680	850	mV_{rms}	2
Distortion	THD (2)	V_i = 100mV_{rms}, f_m = 400Hz, f = ±25KHz		0.5	1.0	%	2
AM Rejection	AMR	V_i = 100mV_{rms}, f_m = 400Hz, f = ±25KHz 30% AM	50	60		dB	2
DCVR Maximum Attenuation	ATT	V_i = 200mV_{rms}, f = 400Hz	70	80		dB	2
AF Amp Gain	G_{AF}	V_i = 100mV_{rms}, f = 400Hz	18	20	22	dB	2
AF Amp Output Voltage	V_o (5)	V_o (5) THD = 10%, f = 400Hz	3	4		V_{rms}	2

TEST CIRCUIT

1. DC TEST



2. AC TEST



VCC = 12V
8.2K
DC VOLUME
10K
SW1
A
B
SIF IN
VIDEO OUT
100
0.01μ
0.01μ
0.01μ
1K
56
100μ
270
2.7K
AFT
TANK
VIDEO
TANK
3.9K
68K
82K
39p
680
4.5M
270
KA2919
5.6K
10μ
0.015μ
1K
10μ
SW3
2.7K
1μ
SW2
0.01μ
0.01μ
0.01μ
PIF IN
50
RF
AGC
DELAY
10K
10μ
1.5K
0.47μ

TYPICAL APPLICATION CIRCUIT

